

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-41. (Canceled)

42. (Currently amended) A removable data storage device for a meter, said meter ~~measuring~~ having a microprocessor and a meter memory containing machine language instructions, said meter using receiving test strips at a first location to measure ~~glucose levels~~ an analyte concentration in ~~blood~~ fluid samples, said meter receiving said removable data storage device at a second location, said data storage device comprising:

a carrier having a proximal end and a distal end, said carrier being keyed shaped for inserting said distal end into said meter in a preferred orientation;

~~a circuit board mounted to said carrier~~ including a circuit board, said circuit board ~~including~~ having a plurality of electrical contacts for electrically connecting to said meter at said second location, said ~~plurality of~~ electrical contacts including a at least one ground contact and a at least one voltage supply contact, ~~said ground contact extending closer to said distal end than said voltage supply contact; and~~

said circuit board including a nonvolatile memory device ~~mounted to said circuit board and electrically connected to said plurality of electrical contacts, said memory storing data for use by said meter, said data including at least one calibration parameter~~

at least one constant for use by the machine language instructions stored in said meter memory with at least one test strip,

whereby when said removable data storage device is inserted into said meter in said preferred orientation, said at least one ground contact becomes electrically connected to said meter before said at least one voltage supply contact permitting reliable uploading of said at least one constant from said nonvolatile memory into the meter memory for subsequent use by the machine language instructions; and whereby said removable data storage device can be removed from said meter such that said at least one ground contact becomes electrically disconnected from said meter after said at least one voltage supply contact thereby minimizing the risk of malfunction.

43. (Currently amended) The removable data storage device of claim 42, wherein said ~~at least one calibration parameter~~ constant includes at least one temperature correction parameter.

44. (Currently amended) The removable data storage device of claim 42, wherein said ~~data~~ at least one constant includes a code which identifies a ~~brand of said at least one test strip.~~

45. (Currently amended) The removable data storage device of claim 42, wherein said ~~data~~ at least one constant includes a code which identifies a model of said meter.

46. (Currently amended) The removable data storage device of claim 42, wherein said ~~data~~ at least one constant includes a code which identifies an expiration date of said at least one test strip.

47. (Currently amended) The removable data storage device of claim 42, wherein said ~~data~~ at least one constant includes ~~specifies~~ at least one time period duration to be used by said meter.

48. (Currently amended) The removable data storage device of claim 42, wherein said ~~data~~ at least one constant includes ~~specifies~~ at least one voltage to be used by said meter.

49. (Currently amended) The removable data storage device of claim 42, wherein said ~~data~~ at least one constant includes ~~specifies~~ a number of current measurements to be taken by said meter.

50. (Currently amended) The removable data storage device of claim 49, wherein said ~~data~~ at least one constant includes ~~specifies~~ values for N and M, where N is the number of current measurements to average together by the machine language instructions in said meter memory to derive M center points for additional averaging method of said current measurements.

51-57. (Canceled)

58. (New) The removable data storage device of claim 43, wherein said at least one temperature correction parameter include constants A, B, C, and D which are employed by machine language instructions in said meter memory according to the formula

$$Y' = A + BT + CYT + DY$$

where Y is the calculated analyte concentration value, T is the temperature and YN is the temperature-corrected analyte concentration value.

59. (New) The removable data storage device of claim 43, wherein said at least one temperature correction parameter includes constant S which is employed by machine language instructions in said meter memory according to the formula

$$Y' = \frac{Y}{1 + S(T - 21)}$$

where Y is the calculated analyte concentration value, T is the temperature and YN is the temperature-corrected analyte concentration value.

60. (New) The removable data storage device of claim 50, wherein the machine language instructions in said meter memory employ constants N and M to calculate a value X according to the formula

$$X = \left(\sum_{m=1}^M \left[\left(\sum_{n=1}^N x_{m,n} \right) / N \right] \right) / M$$

where $x_{m,n}$ are current measurements.